

## عنوان مقاله:

Aerodynamic study of box girder and the Influence of the wing the front and the back edge of the deck on the wake parameters

## محل انتشار:

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## خلاصه مقاله:

This paper investigated the effects of bridge model with and without the wing along the front and the back edge of the deck. For the simulation of fluid flow, open-circuit and blowing wind tunnel was used for which the maximum nominal turbulence was 0.1%. The results were measured at the Reynolds number of 24400 based on the dimension of deck height for the basic box section. The results showed that the turbulence profiles in the wake became broader moving downstream and the peaks in the turbulence intensity profile occurred at positions with high velocity gradients in the velocity profile. By installing the wing at the front and the back edge of deck, the vortex shedding frequency and Strouhal number increased sharply which is correct to say that downstream vortices of flow increased. Increasing the width of the wing along the front and the back edge of deck reduces the drag coefficient, so that the optimum position for the drag coefficient is installing wing at the back edge of deck with  $ww/B=0.25$  and wing at the front and back edge of deck with  $ww/B=0.18$  in comparison to other investigated situations is the most optimized situation. The minimum of Strouhal number is corresponding to basic box section and basic model deck with the ratio  $ww / B = 0.18$  wings along the front and back edge of the deck have the highest increase Strouhal number. In this case, Strouhal number .increases 25% rather than the basic deck

## کلمات کلیدی:

Trapezoidal Box Section, Aerodynamic Configuration, Optimization, Wind Tunnel Test

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/446590>

